

# FOCUS

Reporting on innovative products and strategies for building better, safer roads • September 2000

## Smoother Roads Playbook: A Winning Strategy for Concrete Pavements

**O**n the football field, John Madden coached his team to Super Bowl success. In the new video, *Smoother Roads Playbook*, he introduces viewers to the Kansas Department of Transportation's (DOT) successful strategy for achieving smoother concrete pavements. Since implementing new smoothness specifications for concrete pavements 15 years ago, Kansas has gained national recognition for its innovative techniques and construction practices. The introduction of the pavement smoothness specification "was the single most important impact on concrete paving that I've seen in my career," says Mike Lackey, former State Transportation Engineer for Kansas DOT.

As explained by the video, which was jointly produced by Kansas DOT and the Federal Highway Administration (FHWA), smoothness has been promoted in Kansas not only by the new specifications but through an incentives program that compensates contractors for their extra efforts. This program and the smoothness specification in general have been well received by contractors. "The very fact that Kansas DOT has the smoothness incentive specification has raised the standard of paving in the State of Kansas, without a doubt," says Don Beuerlein, president of Koss Construction.

How have the DOT and contractors achieved these smoother pavements? The best practices advocated by Kansas and addressed in the video include

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U.S. Department  
of Transportation

Federal Highway  
Administration



John Madden is awarded a certificate of appreciation for his work on the new concrete smoothness video, *Smoother Roads Playbook*. Presenting the award is Gary Hamby, FHWA's Western Resource Center manager.

making sure that the stringline, which is the primary guidance system for most paving equipment, is set precisely and protected from damage during paving. It should also be checked for proper grade and elevation before each paving operation. As the video noted, "the stringline has the greatest potential to affect smoothness." Another best practice is to maintain a consistent paving speed and avoid stopping or slowing the paver. To do this, contractors have to make sure they have an adequate supply of concrete delivered to paving sites and that delivery vehicles can move quickly and easily through a site and then back to the

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**Smoother Roads Playbook,**  
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concrete plant. Contractors also strive for mix consistency and constantly monitor the concrete buildup in front of the paver to make sure that it doesn't get too high or low, as this can cause the concrete to swell or, conversely, a low spot to appear, resulting in a rougher pavement.

Implementing a smoothness spec also depends upon accurate monitoring of pavement conditions once the road is in place. Kansas uses a California-type profilograph and zero blanking band to measure pavement smoothness and sets stringent calibration and certification requirements for the equipment. Contractor-owned profilographs have to be recertified for accuracy once a year, and contractors are required to set up a test track at each project site to check the performance of their equipment onsite. Profilograph operators must also attend a certification class once every 3 years.

None of these best practices can be carried out without a motivated

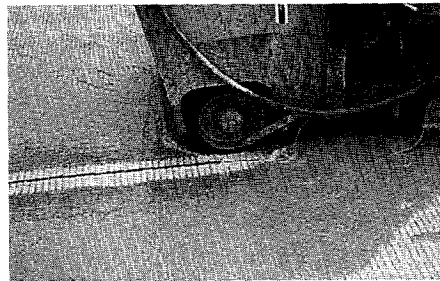
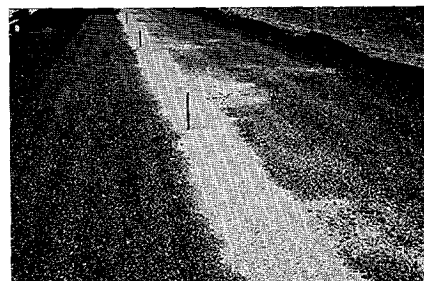
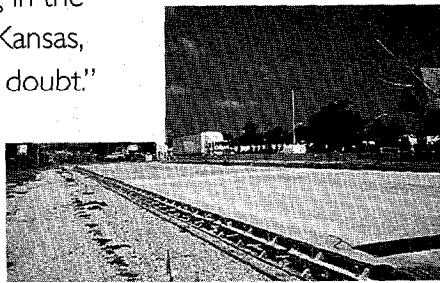
workforce, however. "The key to achieving pavement smoothness starts with the personnel," says Beuerlein. At Wittwer Paving, that belief is put into practice by giving 25 percent of the incentive money received on projects back to employees.

Are ultra-smooth pavements costing Kansas more? The State says no. "I think we get our money's worth," says Lackey. "Our pavements last longer and there's less maintenance." David Wittwer, President of Wittwer Paving, echoes that thought. "We don't think our quality costs a lot of money. In fact, I've told our people, quality doesn't cost—it pays."

That quality will pay off for States and contractors, not only in increased efficiency, but in more satisfied customers. As Madden says in the conclusion of the video, "the more the highway industry uses these techniques, the more all of us who ride on the roads will appreciate what you do."

To obtain a copy of the video, contact Mark Swanlund at FHWA, 202-366-1323 (fax: 202-493-2070; email: mark.swanlund@fhwa.dot.gov).

"The very fact that Kansas DOT has the smoothness incentive specification has raised the standard of paving in the State of Kansas, without a doubt."



Kansas DOT's best practices for achieving smoother concrete pavements include maintaining a consistent paving speed and avoiding stopping or slowing the paver.

## ASPHALT RUBBER 2000

November 14-17, 2000  
Vilamoura, Portugal

Register now for this international conference on the latest in asphalt rubber technology. Conference topics will include:

- Asphalt rubber binder properties
- Asphalt rubber hot-mix properties
- Performance comparison of in-service pavements
- Performance modeling and design specifications

For more information, contact:

Dick Stubstad, Consulpav  
Phone: 805-649-1111  
Fax: 805-649-2133  
Email: stubstad@aol.com  
Web: [www.consulpav.com/AR2000/](http://www.consulpav.com/AR2000/)



# Anti-Icing/RWIS Training Goes Nationwide

66 **H**ow do you train people to use anti-icing techniques and RWIS [road weather information systems]?,” asks

Lee Smithson of the Iowa Department of Transportation (DOT) and coordinator of the American Association of State Highway and Transportation Officials (AASHTO) Snow and Ice Cooperative Program (SICOP). Until now, each State has tackled this question separately, with some States developing their own training programs and others using materials from product vendors. A new project recently launched by AASHTO, the Federal Highway Administration (FHWA), and a pooled-fund research program known as AURORA, which includes State highway agencies and international partners, will bring these individual strands together into a new nationwide training program for anti-icing/RWIS.

The project's primary goal is to develop an interactive, computer-based training program that will have three operating levels: one level for equipment operators, one for supervisors, and one for middle managers. The program will be based on research done under the Strategic Highway Research Program and the National Cooperative Highway Research Program, as well as such documents as the AASHTO *Guide for Snow and Ice Control* and FHWA's *Manual of Practice for an Effective Anti-Icing Program: A Guide for Highway Winter Maintenance Personnel*. It will cover information needed by all users, such as basic meteorology and chemistry. But it will also go beyond the basics and allow users to customize the program to include such variables as climatic information for their region, treatments for specific local road conditions, and regional and local weather forecasting and monitoring. Users can then perform simulations, selecting maintenance practices from a range of alternatives and viewing the resulting consequences of their selections.



The new nationwide training program for anti-icing/RWIS will allow highway personnel to perform computer simulations of such tasks as applying anti-icing treatments or using data collected from RWIS stations.

“When we're done, we should have the crème de la crème of anti-icing/RWIS training,” says Smithson. “A real advantage of the program will be that it can be used in both a group setting for training and by individuals. An operator could just sit down and go through this independently.”

The program's components will also be easy to update, to accommodate future changes or additions to anti-icing/RWIS information.

“This is something that the winter maintenance community has been working towards for a long time,” says Paul Pisano of FHWA. “It will provide more consistency in how anti-icing is handled across the country, which will be reflected in what the driving public experiences.”

A contract to develop the training will be awarded this fall, with the program scheduled to make its debut in the fall of 2001. The project is being jointly funded by SICOP, FHWA, and AU-

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RORA. States, counties, or municipalities who have contributed at the top level of \$30,000 to project funding will receive a program specifically tailored to their State, while others who have contributed at the lower level of \$5,000 will receive a generic program package. Governmental agencies not participating at this time in the pooled-fund project will be able to purchase the program from AASHTO, although a price has not yet been determined.

For more information, contact Lee Smithson at 515-239-1519 (fax: 515-239-1719; email: lsmiths@max.state.ia.us).

# Students Encouraged to Unlock the Data in Third Annual LTPP Contest

University students once again have the opportunity to analyze the wealth of data contained in the long-term pavement performance (LTPP) program database, as the Federal Highway Administration (FHWA) and American Society of Civil Engineers (ASCE) kick off the third annual International Contest on LTPP Data Analysis. "Nothing can substitute for the inquisitive young mind when trying to find ways to mine information and solve problems using real data," says Jim Sorenson of FHWA.

Using the DataPave 2.0 software, which contains information on traffic, materials, performance, environment, and other variables at the more than 2,400 LTPP test sections across the United States and Canada, students choose a research topic. They then conduct the research, analyze the data, and submit the findings in the form of a paper for evaluation. The deadline for submissions is June 1, 2001.

"The contest puts the data in the hands of professors and students, creating the opportunity to use this significant database for research, class projects, and Master's or Ph.D. theses," says Professor Gary Hicks of Oregon State University and chair of the contest Expert Task Group. Possible analysis topics include traffic load characteristics; effects of traffic, environment, and materials on distress; mechanistic design considerations; and identification of distresses related to performance. Students can enter the contest on their own, work as a team with other students, or partner with a State highway agency or industry group. There is also a separate contest category for professors to submit course curricula developed using the LTPP data.

Papers will be evaluated by the following criteria:

- Usefulness of product and potential benefit to end users
- Originality of concept
- Demonstrated use of LTPP database
- Organization of paper
- Presentation (including clarity and style)

The evaluation will be done by a committee consisting of ASCE members and FHWA staff, as well as representatives from universities, industry, and highway agencies. Winners are selected at both a regional and national level.

Contest winners will receive a cash prize and will be recognized at the ASCE National Meeting in October 2001. Selected winners will also be invited to participate in the Transportation Research Board (TRB) annual meeting in January 2002. Winning papers will be published by ASCE.

Christopher Byrum, a civil engineering student at the University of Michi-

gan at Ann Arbor, was awarded the grand prize in the inaugural 1998-1999 contest for his paper on "The Effect of Locked-in Curvature on PCC Pavement." The winners of the 1999-2000 contest will be announced this month.

For more information on the contest, contact Edwina Chen at ASCE, 703-295-6199 (fax: 703-295-6132; email: [echen@asce.org](mailto:echen@asce.org)). To obtain a free copy of the DataPave software, contact the LTPP customer service center at 865-481-2967 (fax: 865-481-8555; email: [ltppinfo@fhwa.dot.gov](mailto:ltppinfo@fhwa.dot.gov); Web: [www.ltppdatabase.com/main/htm](http://www.ltppdatabase.com/main/htm)). More information on the contest is also available at the LTPP Web site ([www.tfhrc.gov/pavement/ltpp/contest.htm](http://www.tfhrc.gov/pavement/ltpp/contest.htm)). Conference participants are also encouraged to subscribe to an LTPP and DataPave List Serve at the University of Mississippi that is sponsored by FHWA (LTPP-L@listserv.mcsr.olemiss.edu).

"The contest puts the data in the hands of professors and students, creating the opportunity to use this significant database for research, class projects, and Master's or Ph.D. theses."

The screenshot shows the 'LONG TERM PERFORMANCE' section of the LTPP website. It features a navigation menu on the left with links like Home, About LTPP, Data, Research, Products, and Communications. The main content area is titled 'International Contest on LTPP Data Analysis' and contains text about the contest's purpose, winners, and submission details. A sidebar on the right lists 'DataPave Product Release' and 'Order Information'. At the bottom, there are links for 'LTPP Home', 'Home', 'What's New', 'Data Analysis', 'Products', and 'Communications', along with a 'Last Modified' date of 02/17/2000.

# Concrete for the 21st Century

**M**ark your calendars now for the Seventh International Conference on Concrete Pavements, scheduled for September 9-13, 2001, in Orlando, Florida. The conference will feature new technologies related to the design, construction, and rehabilitation of concrete, with the overall theme being the use of concrete in developing long-lasting pavement solutions for the 21st century.

Conference topics will include:

- High-performance concrete pavements
- Mechanistic design procedures for new and rehabilitated concrete pavements
- Prestressed concrete pavements
- Whitetopping
- Fast track paving

- Concrete pavements for high-volume urban highways
- Concrete pavements for low-volume rural highways
- Accelerated load testing of concrete pavements
- Portland cement concrete (PCC) pavement rehabilitation
- PCC pavement materials
- Performance-related specification and warranty for PCC pavements

Another conference highlight will be a day of workshops and technical sessions on "Formulating the Long Range Research Needs for PCC Pavements." In addition, an exhibit hall will showcase new products and services.

The conference is designed for Federal, State, and municipal engineers; consulting engineers; contractors; ma-

terial suppliers; and academics, as well as others involved in concrete pavement design, construction, testing and evaluation, and rehabilitation.

The conference is being organized by the International Society for Concrete Pavements. Cosponsors are the American Concrete Pavement Association, American Association of State Highway and Transportation Officials, Transportation Research Board, Purdue University, Portland Cement Association, Innovative Pavement Research Foundation, Florida Department of Transportation, Florida Concrete and Products Association, World Road Association (PIARC), and Federal Highway Administration.

For more information, contact Shiraz Tayabji at Construction Technology Laboratories, Inc., 410-997-0400 (fax: 410-997-8480; email: stayabji@ctlgroup.com; Web: iscp.tamu.edu/).

## CONFERENCE INTEREST FORM

### 7th International Conference on Concrete Pavements

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Country: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

- ☐ I plan to attend the conference. Please send me a registration package when available.
- ☐ I am interested in obtaining membership information on The International Society for Concrete Pavements.
- ☐ I plan to exhibit at the conference. Please send me an exhibit registration package when available.

Please return this form to:

**Dr. Charles E. Scholer**  
**7th International Conference on Concrete Pavements**  
**Purdue University**  
**1284 Civil Engineering Building**  
**West Lafayette, IN 47907-1284 USA**

## In Brief...

**Jack Springer** has joined the long-term pavement performance (LTPP) program as a highway research engineer. He will be responsible for overseeing field operations for the four LTPP regions. Springer had previously worked since 1995 in FHWA's Ohio division office as a research technology transfer engineer and urban program engineer.

On July 19, the first **National Intelligent Vehicle Initiative (IVI)** meeting was kicked off at the Turner-Fairbank Highway Research Center in McLean, Virginia, with demonstrations of highly-equipped light, commercial, transit, and specialty vehicles. Participants were able to test drive the vehicles, which ranged from smart cars and trucks to a bus and a snowplow, and received a first-hand look at such features as lane change warning systems, adaptive cruise control, and night vision. Technologies that facilitate rear-end collision avoidance were also demonstrated.

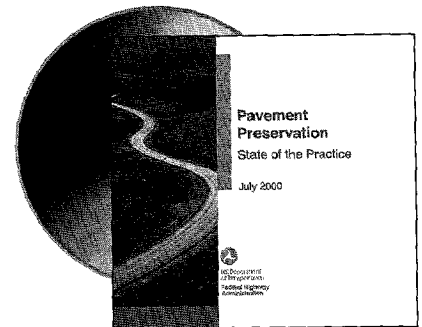
As part of the Intelligent Vehicle Initiative, the motor vehicle industry and four agencies of the U.S. Department of Transportation (the Federal Highway Administration, Federal Motor Carrier Safety Administration, National Highway Traffic Safety Administration, and Federal Transit Administration) have joined forces to advance the development and marketing of IVI products. IVI systems can potentially alert drivers of hazards on the road, recommend

a safe course of action, and even take over partial control of the vehicle to avoid collisions.

For more information about the Intelligent Vehicle Initiative, contact Ray Resendes at FHWA, 202-366-2182 (email: ray.resendes@fhwa.dot.gov).

For States looking for more information on long-term pavement performance program (LTPP) products and data collection, an important resource to turn to is the **LTPP regional staff**. For information on data collection activities in the Western and North Central parts of the country, contact Monte Symons at 708-283-3549 (fax: 708-283-3501; email: monte.symons@fhwa.dot.gov). For details on data collection activities in the Southern and North Atlantic regions, contact Luis Rodriguez at 404-562-3681 (fax: 404-562-3700; email: luis.rodriguez@fhwa.dot.gov). For information on LTPP product development and implementation, contact:

- West—John Klemunes, 415-744-2662 (fax: 415-744-2620; email: john.klemunes@fhwa.dot.gov).
- South—Luis Rodriguez, 404-562-3681 (fax: 404-562-3700; email: luis.rodriguez@fhwa.dot.gov).
- North Central—Monte Symons, 708-283-3549 (fax: 708-283-3501; email: monte.symons@fhwa.dot.gov).
- North Atlantic—Jim Walls, 410-962-4796 (fax: 410-962-4586; email: james.walls@fhwa.dot.gov).



A new CD-ROM available from the Federal Highway Administration (FHWA), *Pavement Preservation: State of the Practice, July 2000*, points the way for highway agencies looking to successfully initiate a pavement preservation program. The CD-ROM contains guidelines on pavement preservation from the departments of transportation in California, Michigan, Minnesota, and Ohio. These agencies share the best practices they have learned, as well as the benefits that have resulted from their preservation efforts. These benefits include improved ride quality, extended service life, and increased customer satisfaction.

The CD-ROM was developed as a cooperative effort of the American Association of State Highway and Transportation Officials, Lead States Team for Pavement Preservation, Foundation for Pavement Preservation, and FHWA. To obtain a copy, contact the FHWA Research and Technology Report Center at 301-577-0818 (fax: 301-577-1421; email: marl.green@fhwa.dot.gov). For more information, contact Jim Sorenson at FHWA, 202-366-1333 (fax: 202-366-9981; email: james.sorenson@fhwa.dot.gov).

# Highway Technology Calendar

*The following events provide opportunities to learn more about Strategic Highway Research Program (SHRP) products and technologies, as well as other technologies for building better, safer roads.*

## **Fifth Annual AASHTO Lead States Workshop**

September 17-19, 2000,  
St. Louis, MO

The final Lead States Workshop will provide an official wrap-up for members of the seven teams. The team members will also discuss their transition plans for shifting responsibilities to the appropriate AASHTO subcommittees.

*Contact:* Haleem Tahir at AASHTO, 301-975-5275 (fax: 301-330-1956; email: haleem.tahir@nist.gov).

## **International Symposium on High-Performance Concrete**

September 25-27, 2000, Orlando, FL

The symposium will address the research, design, construction, performance, and benefits of high-performance concrete. It is being held in conjunction with the 46th annual Precast/Prestressed Concrete Institute Annual Convention and Exposition.

*Contact:* Terry Halkyard at FHWA, 202-366-6765 (fax: 202-366-3077; email: terry.halkyard@fhwa.dot.gov).

## **Partnerships for Sustainability: A New Approach to Highway Materials**

October 9, 2000, Houston, TX

The goal of this workshop is to apply sustainability principles to the use of highway materials. Speakers from various European countries will

discuss their solutions to the environmental, economic, and engineering barriers that prevent the use of recycled materials in highway construction.

*Contact:* Katherine Holtz at 512-467-5998 (fax: 512-302-2215; email: kholtz@dot.state.tx.us; Web: www.rmrc.unh.edu/).

## **Northeast Asphalt User Producer Group Annual Meeting**

October 25-26, 2000, Portland, ME

*Contact:* Jim Dunne, 410-859-4564 (fax: 410-859-4565; email: jedunne@msn.com).

## **Asphalt Rubber 2000: The Pavement Material of the 21st Century**

November 14-17, 2000,  
Vilamoura, Portugal

The conference will feature sessions on such topics as asphalt rubber binder design, pavement performance, and recycling.

*Contact:* Dick Stubstad at Consulpav, 805-649-1111 (fax: 805-649-2133; email: stubstad@aol.com; Web: www.consulpav.com/AR2000/).

## **Eighth Annual United States Hot-Mix Asphalt Conference**

November 15-17, 2000,  
Cincinnati, OH

Sponsored by the National Asphalt Pavement Association (NAPA), State asphalt pavement associations, and the Asphalt Institute, the conference is designed for paving professionals in both the public and private sectors. This year's conference will focus on innovative contracting practices that provide incentives to build better pavements faster in order to increase

customer satisfaction. Conference cosponsors include the Federal Highway Administration, American Association of State Highway and Transportation Officials, National Association of County Engineers, and Ohio Department of Transportation.

*Contact:* Carol Prouty at NAPA, 301-731-4748 (fax: 301-731-4621; email: carol@hotmix.org; Web: www.hotmix.org/2000hmaconf/index.htm).

## **Asphalt Technology 2000**

December 10-13, 2000, Austin, TX

The conference is designed to provide a forum for transportation professionals and industry representatives to share information on practical engineering solutions to pavement problems. Topics covered will include specifications, pavement maintenance, and state-of-the-art technology.

*Contact:* Sharon Campos at the University of Texas at Austin, 512-471-3396 (fax: 512-471-0831; email: scampos@mail.utexas.edu).

## **Eightieth Transportation Research Board Annual Meeting**

January 7-11, 2001,  
Washington, DC

*Contact:* Transportation Research Board at 202-334-2934 (Web: www.nationalacademies.org/trb/).

## **North Central Asphalt User Producer Group Annual Meeting**

January 16-18, 2001,  
Indianapolis, IN

*Contact:* The North Central Superpave Center at 765-463-2317 (Web: bridge.ecn.purdue.edu/~spave/Ncaupg2001prelim.html).

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**Highway Technology Calendar,**  
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**Fourth Annual Asphalt  
Conference & Expo**

March 11-14, 2001, Atlanta, GA

Conference topics will include work zone safety, quality control/quality assurance, choosing the right aggregate, and recycling and reclaiming. The conference will also feature outdoor repaving and reclamation demonstrations.

*Contact:* Wendy Cantwell at  
816-246-7711 (fax: 816-254-7446).

**Seventh International Conference  
on Concrete Pavements**

September 9-13, 2001, Orlando, FL

Designed for pavement and geotechnical engineering professionals, the conference's focus is on using

concrete to develop long-lasting pavement solutions for the 21st century. The event will highlight new technologies related to the design, construction, and rehabilitation of various types of concrete pavements. Another highlight will be a day of workshops and technical sessions on "Formulating the Long Range Research Needs for PCC Pavements." In addition, an exhibit hall will showcase new products and services.

*Contact:* Shiraz Tayabji at Construction Technology Laboratories, Inc., 410-997-0400 (fax: 410-997-8480; email: stayabji@ctlgroup.com; Web: iscp.tamu.edu/).

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*Focus* is a vehicle for promoting SHRP products and other highway technologies that FHWA and States are using to build better, safer roads. The Strategic Highway Research Program (SHRP) was established by Congress in 1987 as a 5-year, \$150 million research program to improve the performance and durability of our Nation's highways and to make them safer for motorists and highway workers. As a follow-on to SHRP, Congress provided funding in the Intermodal Surface Transportation Efficiency Act of 1991 to implement SHRP products and to continue SHRP's long-term pavement performance (LTPP) program. While the 1998 Transportation Equity Act for the 21st Century did not specifically allocate any money for SHRP initiatives, FHWA remains committed to the continued implementation of SHRP products.

**Notice**—The United States Government does not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the object of the article.

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